Netlink™
FRX6000

Installation
&
Setup
Guide

CABLETRON SYSTEMS
The Complete Networking Solution ™

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Statements of Compliance

FCC

The equipment provided by Cabletron Systems, Inc. and documented in this manual has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the installation manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to, at his/her own expense, take the necessary measures to eliminate the interference.

To ensure compliance with the Class A FCC limits, use only shielded cables with this equipment. Any cable installed above a ceiling or below a floor must be of a material and construction approved by UL for that application.

DOC (Canada)

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limits applicables aux appareils numeriques de la class A prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.

About This Manual

Terminology and Conventions

This typeface represents general text. **This typeface represents computer input and output.**

This symbol points to an informational note relating to the text, table, or figure that immediately precedes or follows it.

This symbol and text identifies a cautionary note, the content of which is more critical to heed than an informational note.

References to keyboard keys appear as **"[N]"**, where "**N**" is a specific key:

Screen displays are provided to show the general appearance of actual screens. They are only examples—they do not necessarily represent an operational system.

Related Documents

A copy of the *Netlink FRX4000 and FRX6000 User Guide* should always be on site at each FRX6000. Copies of this and other Cabletron documents can be ordered from Cabletron Systems or your local distributor of Cabletron products.

Overview of Installation and Setup

When a Netlink™ FRX6000 is ordered, the customer and sales representative decide on the required components (cards, cables, etc.). Cards and software are then installed before the node is shipped. This document describes the steps to be taken at the customer site to set up an FRX6000.

The basic steps are as follows:

1. Set up the hardware – Unpack and set up the node and any peripheral equipment (keyboard, monitor/terminal, etc.). Connect all cables.

2. Configure the video device – If using an ASCII terminal, set the operating parameters. If using a VGA monitor, reconfigure an FRX6000 software file.

3. (Only if the node has a Token Ring card) Configure the Token Ring card if you need to change the default settings.

4. Check for Proper Operation – Switch on the node and any peripherals, and check for proper operation.

5. Configure database records (described in the *Netlink FRX4000 & FRX6000 User Guide*).

Site Requirements

Environment: 41–104° F (5-40° C) and 20–80% humidity, non-condensing.

An AC power outlet of the appropriate voltage (115 or 230 VAC) must be located within six feet of the device.

For adequate air flow, allow at least six inches of clearance at the rear and at least two inches at the sides, front, and top. Provide enough space in the rear to allow installation or removal of cables without moving the unit.

For reference, the chassis dimensions are:
   In.: 19w, 16.9d, 7.0h (front panel is 19w)
   Cm: 48.3w, 42.9d, 17.8h (front panel is 48.3w)

Hardware Requirements

Although a keyboard and video device are not necessary for normal operation, they are required for initial configuration. An FRX6000 can use an ASCII terminal or VGA monitor. The software is configured for an ASCII terminal with a speed of 9600 bits per second. If you will be using a VGA monitor, or a terminal with a speed other than 9600 bps, you must connect a keyboard and VGA monitor to the node, in order to rerun part of the FRX6000 software installation procedure to change the configuration. (Each FRX6000 is shipped with cabling to allow connection to an ASCII terminal or PC with terminal emulation)

Installation and Setup Procedure

Set Up the Device

1. Unpack and inspect the equipment. If there is evidence of physical damage, contact the shipper. If parts are missing, contact your sales representative.

2. Set up the equipment, noting the site requirements listed earlier in this chapter. Make sure the voltage selection switch (shown in Figure 1) is set correctly.

   For guidance in placing equipment, standard cable lengths are:
      Power cables = 5 feet
      User interface cables = 5 feet
      Auxiliary Console cables = 5 feet
      VGA monitor-to-node cable = 4 feet
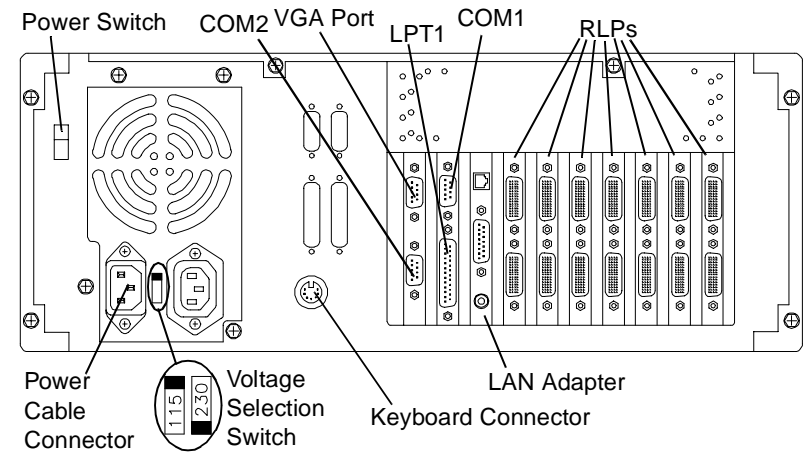   RLP to I/O box cable = 4 feet

Figure 1   Rackmount Chassis, Rear View

The combinations of RLPs and LAN adapters might vary from what is shown.
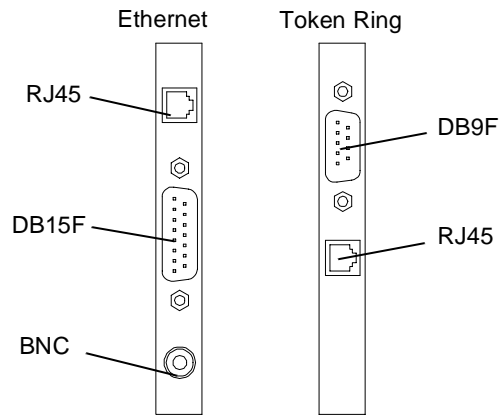
LAN adapter connectors are shown in Figure 2.

Ethernet   Token Ring

RJ45

DB15F

BNC

DB9F

RJ45

Figure 2   LAN Card Connectors

3. Assuming the node will be mounted in a rack, it can be secured to slides, or set on a fixed or slide-out shelf. The node can also be mounted directly to the cabinet frame, but this makes access difficult.

Do not support a rack-mounted node only in the front. It must be supported at both front and rear.

CAUTION

4. Plug all cables into the appropriate connectors at the rear of the FRX6000, and tighten the retaining screws on each cable connector that has them. (It does not matter which end of an RLP cable plugs into the RLP.) Figure 1 shows the connectors on the rear of the chassis, and Figure 3 shows some cable retaining screws.

5. Plug the RLP cables into their associated I/O boxes and tighten the retaining screws. If the assembly is being rack mounted, attach the I/O boxes and cables as shown in Figure 3, using the hardware provided.

Leave a 24–36 inch service loop in each cable between the mounting rails and the rear of the node, to allow the unit to be pulled forward.
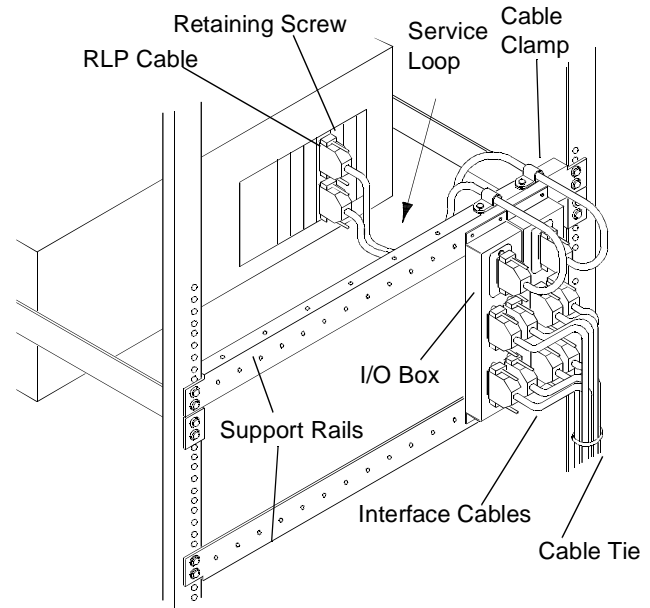
Retaining Screw   Service   Cable
RLP Cable   Loop   Clamp

I/O Box

Support Rails

Interface Cables

Cable Tie

Figure 3   Rack-Mounted I/O Boxes

NOTE

In the above example, both Line Interface Cards (LICs) on the RLP are 4-port LICs (V.35, RS-232, or RS-422). A T1 or E1 LIC includes an RJ45 adapter instead of an RLP cable and I/O box. (The T1/E1 cable is not supplied.)

Table 1   WAN Port Interface Cables

Cable Type	Cabletron Part Number
V.35 DTE	FRX-V35DTE-CAB [1]
V.35 DCE	FRX-V35DCE-CAB
RS-232 DTE	FRX-232DTE-CAB
RS-232 DCE	FRX-232DCE-CAB
RS-449 DTE	FRX-449DTE-CAB
RS-449 DCE	FRX-449DCE-CAB
X.21 DTE	FRX-X21DTE-CAB
X.21 DCE	FRX-X21DCE-CAB

* One V.35 DTE cable is shipped as standard equipment with each FRX6000.

Configure the Video Device

Follow the appropriate procedure to configure the FRX6000 to operate with an attached Auxiliary Console (ASCII terminal) or VGA monitor.

Auxiliary Console

This feature allows an FRX6000 to be controlled from an asynchronous (ASCII) terminal connected—directly or via modems—to the node's COM1 serial port.

The following items are shipped with each FRX6000, to allow for different methods of connecting an auxiliary console:

- Cable, DB9S to DB9S, for connecting the node's COM1 port directly to a PC with software emulating an ASCII terminal.
- Adapter, DB9P to DB25S, for connecting the node directly (via the above cable) to an ASCII terminal.
- Cable, DB9S to DB25P, for connecting an ASCII terminal via modem to the COM1 port.

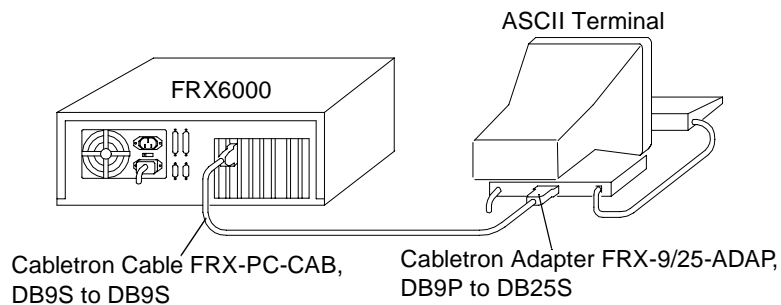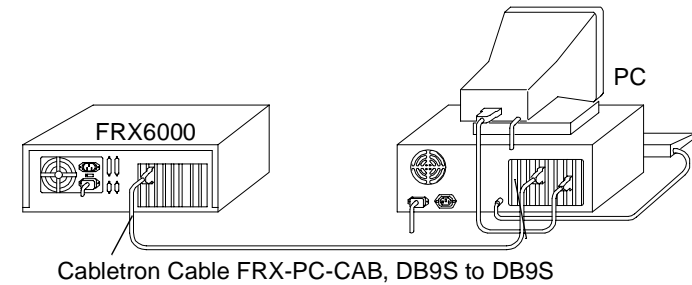Figure 4 through Figure 6 show the cabling configurations.

Cabletron Cable FRX-PC-CAB, DB9S to DB9S

Cabletron Adapter FRX-9/25-ADAP, DB9P to DB25S

Figure 4   Auxiliary Console Cabling Example 1

Cabletron Cable FRX-PC-CAB, DB9S to DB9S

Figure 5   Auxiliary Console Cabling Example 2

Cabletron Cable, FRX-MOD-CAB, DB9S to DB25P
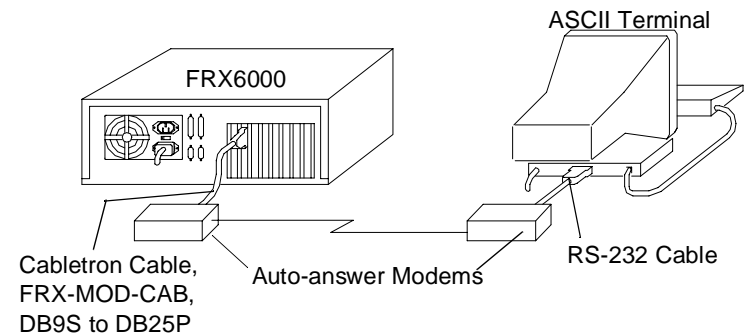
Auto-answer Modems

RS-232 Cable

Figure 6   Auxiliary Console Cabling Example 3

Follow this procedure to set up the auxiliary console:

1. If the terminal's speed is 9600 bps, go to step 11. If the speed is 1200, 2400, or 4800 bps, you must reconfigure the FRX6000 software, which requires a VGA monitor (and keyboard). Connect the monitor to the VGA port on the FRX6000 (see Figure 1) and plug the keyboard cable into the keyboard connector.

2. Plug the FRX6000 and VGA monitor power cables into the appropriate power source, then switch the monitor on.

3. Insert the *FRX6000 System Disk* into the node's drive A and switch the node on.

4. A message concerning LAN card configuration will be displayed. When prompted: **Strike any key when ready**, press **[Enter]**.

5. When asked: **Will you be using an Async terminal to configure your FRX6000?**, press **[Y]**.

6. When prompted for a terminal speed, type the line speed (in bits per second) of the attached terminal (**1200, 2400**, or **4800**) and press **[Enter]**.

7. When asked: **Are you changing only the Async console or LAN adapter configuration?**, press **[Y]**.

8. You will be asked: **How many LAN cards have you installed (0-2)?**

> Even though you are changing only the async terminal setup, you must redo the LAN card setup (if cards are installed), since changing the terminal setup writes over a file that contains the specifications for the terminal and the LAN cards.

If none, press **[Enter]** to accept the default of **0**, then go to step 10. Otherwise, enter the number of LAN cards and go to step 9.

9. You will be asked to specify the type of LAN card 0. (LAN cards are numbered **0** and **1**.) Enter the appropriate number from the choices:

> **3 – SMC EtherCard Plus Elite16**
> **4 – IBM Token Ring Card**
> **5 – SMC Token Ring Card**

> The IBM card is not currently offered, but is supported by the software for some functions. Discuss your configuration requirements with Cabletron Systems Technical Support if a node contains an IBM card.

If only one LAN card is installed, go to step 10. If two are installed, repeat step 9 for the second card, then go to step 10.

10. Remove the diskette, switch the FRX6000 and VGA monitor off, and disconnect the monitor from the FRX6000's VGA port.

11. Install the console and cabling as shown in Figure 4 through Figure 6.

12. Set up the terminal as described in the user's manual for that terminal, with the terminal should be set to:

Autowrap,	Application Keypad	Application cursor key
No newline	No break	VT100 (ASCII) mode
Tab every 8 columns	8 bits no parity	

VGA Monitor

1. Connect the monitor to the VGA port on the FRX6000 (see Figure 1) and plug the keyboard cable into the keyboard connector.

2. Plug the FRX6000 and VGA monitor power cables into the appropriate power source, then switch the monitor on.

3. Insert the *FRX6000 System Disk* into the node's drive A and switch the node on.

4. A message concerning LAN card configuration will be displayed. When prompted: **Strike any key when ready**, press **[Enter]**.

5. When asked: **Will you be using an Async terminal to configure your FRX6000?**, press **[N]**.

6. When asked: **Are you changing only the Async console or LAN adapter configuration?**, press **[Y]**.

7. You will be asked: **How many LAN cards have you installed (0-2)?**

> Even though you are changing only the async terminal setup, you must redo the LAN card setup (if cards are installed), since changing the terminal setup writes over a file that contains the specifications for the terminal and the LAN cards.

If none, press **[Enter]** to accept the default of **0**, then go to step 9. Otherwise, enter the number of LAN cards and go to step 8.

8. You will be asked to specify the type of LAN card 0. (LAN cards are numbered **0** and **1**.) Enter the appropriate number from the choices:

> **3 – SMC EtherCard Plus Elite16**
> **4 – IBM Token Ring Card**
> **5 – SMC Token Ring Card**

> The IBM card is not currently offered, but is supported by the software for some functions. Discuss your configuration requirements with Cabletron Systems Technical Support if a node contains an IBM card.

If only one LAN card is installed, go to step 9. If two are installed, repeat step 8 for the second card, then go to step 9.

9. Remove the diskette from the drive.

Configure the Token Ring Card

If the node has a Token Ring card, it is configured for a speed of 16 MB/sec and UTP (unshielded twisted pair) cable. If you wish to change either setting, follow this procedure:

1. Boot the node with a DOS system disk.

2. At the **A:>** prompt, insert the SMC *SuperDisk*, then type **ezstart** and press **[Enter]**. The **EZStart** main menu will be displayed, showing the current configuration of any installed SMC Token Ring adapter(s).

3. If there are two Token Ring cards installed, select the adapter number (**Select Adapter**).

4. Select **Custom**, then change the **Network Interface** setting(s) as desired.

5. When finished reconfiguring the card(s), remove the diskette.

Check for Proper Operation

This procedure requires a video device connected to the node.

1. Switch the node on and watch the power-up and boot messages for signs of problems. A typical power-up sequence display will contain BIOS copyright information followed by a System Configuration table: disk drive types, base and extended memory, etc. A typical boot sequence will include copyright information, debug messages, and messages tracking the loading of RLPs.

   Watch power-up and boot messages carefully—some errors will cause a pause, but otherwise will not interfere with the boot process, and the only way you will know there is a problem is to see the message as it is displayed. Be aware of messages that say: **Loading LP "n" - RLP**. Such a message should appear for each installed RLP.

   Some messages are written to a file called *BOOTRPT.TXT*. Once the FRX6000 software is running, this file can be displayed. (See "Displaying Boot-up Information" on pge 11.)

   Once the software has loaded, a screen similar to the following will be displayed.

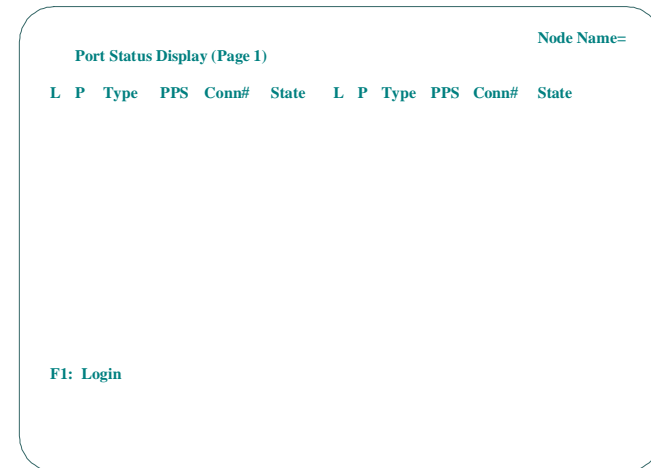|					Node Name=
Port Status Display (Page 1)					
L P Type PPS Conn# State		L P Type PPS Conn# State			

F1: Login

Figure 7   Port Status Display

2. To log in, press **[F1]** at the Port Status Display, then enter the FRX6000 password when requested. (The default password when the software is installed is **NETLINK**.) Once the password has been entered, the Main Menu (Figure 8) will be displayed.

   If the entered password is not correct, the Port Status Display will reappear; if no password is entered, the Port Status Display will reappear after a one minute timeout.
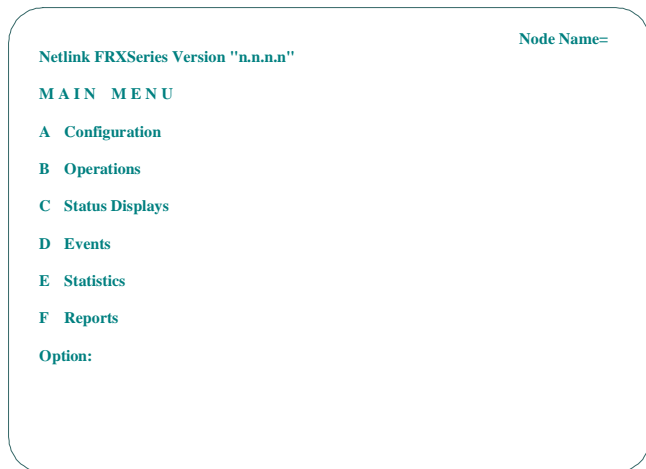
```
                                                    Node Name=
Netlink FRXSeries Version "n.n.n.n"

M A I N   M E N U

A   Configuration

B   Operations

C   Status Displays

D   Events

E   Statistics

F   Reports

Option:
```

Figure 8   Main Menu

3. From here, configure the database as described in the User Guide, or, if there was some problem, go to "Displaying Boot-up Information."

Displaying Boot-up Information

As the node boots, screen information tracks the loading of RLPs, verifies configuration file format, and displays any errors. This data is displayed only until the FRX6000 software is running; however, most of it is saved in a file named *BOOTRPT.TXT*, and the operator can later display it in a report.

This can be used as a tool to verify that startup of the node proceeded without errors, or to remind an FRX6000 operator of the number or RLPs in the node. If there is an error reported, the data may aid in fixing the problem.

To display the data from the current boot-up, press [C] at the Reports Menu (or [F], then [C] from the Main Menu). To display the data from the previous boot-up (saved in a file called *BOOTBAK.TXT*) , press [D] at the Reports Menu (or [F], then [D] from the Main Menu).

BOOTRPT.TXT and *BOOTBAK.TXT* can be used as follows:

1. Display and review the data from the "current" boot of the node.

2. Address any reported problems.

3. Re-boot the node. (This copies the previous boot data to a backup file.)

4. Display the new boot data, and compare it to the previous data. This will show whether the problem was fixed. Also, a problem that occurred during the previous boot-up will often be cleared up by re-booting.

Questions?

If you have questions or problems, please contact Cabletron Systems Technical Support at:

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